Deferred Revenue Model

Base Billings Check: Sunburst Chart

## Problem:

The process of classifying billings is difficult and involves many levels of data. We need a simple graphic to explain the depth and breadth of the billings data and understand the magnitude of some of the assumptions we are making when we build the deferred revenue waterfall.

## Sunburst Charts:

Plotly is a graphing/visualization library that is widely used to demonstrate more complicated charts than you can get in matplotlib. The sunburst charts available in this package make it easy to interactively explore parent/child relationships with complicated data. The link below explains how to build sunburst charts from pandas dataframes.

<https://plotly.com/python/sunburst-charts/>

To install plotly, go to the anaconda prompt and type “conda install plotly”.

## Sunburst Chart Structure:

We need a sunburst chart for data on the ‘base\_billings’ tab of the ‘all\_billings\_inputs\_08\_20.xlsx’ file. Load this file into a dataframe using pandas in a Jupyter notebook.

The structure of the Sunburst chart should include the following levels:

1. *POB Type:* This is the first level of classification of the base billings. See the “Deferred Revenue Model August 2020.doc” in the docs folder of the repository for details on how POB Type is classified. To be clear, this is a field that is already contained in the excel file.
2. *Rev\_Rec\_Category:* The category field is not currently in the base billings file, and we need to add the ‘category’ field to the base billings based on the table below. Add the column ‘rev\_rec\_category’ to the dataframe and classify each row by adding the ‘Field to be added’ in the table below based on the POB type in the dataframe.

*Note:* There are many rows that do not have a POB type. Please make these rows contain the field ‘blank’ in the rev\_rec\_category column

|  |  |  |  |
| --- | --- | --- | --- |
| Category | POB Types | Field to be added | Description |
| Immediate Revenue | IR, IR-NA, LFB | Immediate | These are the same as perpetual sales. They go directly to revenue and have no impact on deferred. |
| Service-Based Revenue | CR, CR-NA | Service | Contract Duration determines the length of time they amortized from deferred revenue to revenue. |
| Deferred Revenue | RR, RR-NA | Deferred | Look to revenue recognition type and other fields to determine how these billings amortized from deferred to revenue |
| Hybrid | BNDL | Hybrid | 17% immediate revenue, the remaining 83% is deferred |

1. *Rev Rec Type:* For the rows that we have categorized as deferred, we need to add the ‘Rev\_Rec\_type’ field to the sunburst chart.
2. *Sales\_Doc\_Type:* For the blank POB types, we need to add the sales doc type to the sunburst chart.

The Sunburst chart to display USD amounts.

The code to produce the chart should be developed in a notebook, but the final product should include a single function that takes as an input the dataframe (labeled df) and creates the sunburst chart. We will use this function as part of the deferred revenue program to determine if there are significant changes to the tableau data. For example, the percentage of billings that are missing a POB\_type will be important to track.